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interval. Incidentally it may be observed that when a Difflugian discharges all its food or the remains of it and is some time deprived of sustenance, the sarcode mass becomes reduced so as to occupy but a small portion of the space within the test to which it is then attached by long threads of the ectosarc. Having observed an individual of *Nebela numata* with a small bulbous mass of sarcode projecting from the mouth, I watched it closely. In the course of one hour and three-quarters the protruded sarcode had gradually enlarged and assumed the form and nearly the size of the test. Half an hour later the sarcodic mass suddenly burst, leaving detached from the *Nebela* test two large and clear globules of protoplasm, and separately the mass of granular matter, remains of the food, that had occupied the entosarc. Later, the two globules of protoplasm appeared shrivelled, and the *Nebela* test contained only some dirt, part of the remains of the food which had occupied the entosarc.

Later, I saw the same process nearly repeated with a *Nebela flabellulum*. This measured a tenth of a millimetre broad, with a fraction less in length, and when first noticed had a mass of protruding protoplasm about one-thirtieth of a millimetre in diameter. Three hours subsequently the latter had separated from the mouth of the test, and had acquired nearly the size and form of the *Nebela*. In this condition it remained another hour, and shortly afterwards appeared shrivelled and dead. The *Nebela* test appeared to be empty of sarcode and contained only dirt, apparently the remains of the food which had occupied the entosarc.

Hertwig and Lesser (Archiv f. Mikr. Anat. 1874, Pl. III., figs. 8 B. C.) represent the same condition in *Lecythium hyalinum* as the result of dissolution.

Bütschli mentions a nearly similar occurrence with an *Arcella*. He says that after the conjugation of a pair, he observed one of the animals with a large portion of the protoplasm protruded. Later, this lay near the *Arcella* as a clear circular plate of the same size, but without mouth or structure. The protoplasm had withdrawn into the test, and, later, both appeared decomposed.

These last cases may have been abortive attempts at reproduction, ending in dissolution.

During the recent observations to detect the mode of multiplication of Rhizopods, I found an *Arcella vulgaris* which contained between the central sarcodic mass and the test four oval bodies. These, at first glance, I thought were young *Arcellæ*, but discovered that they were eggs, and, watching them for several days, they were seen to develop Rotifers. They were prevented from escaping from the test by the sarcode mass of the *Arcella*, and finally all died together.

On the Velocity of Infinite Fall.—Prof. PLINY E. CHASE remarked that in his studies of the influence of planetary centres of oscillation, orbital collision, *vis viva*, harmonic nodes, and luminous undulation, his attention had been lately directed to Ennis's views[1] respecting the influence of the velocity of infinite fall. In nebular condensation from r to $\frac{r}{n}$, the increase of radial velocity is $(\sqrt{n}-1)\sqrt{2gr}$; the circular-orbital velocity at $\frac{r}{n}=\sqrt{ngr}$; therefore the increment of radial velocity would be sufficient to produce orbital velocity when $n=\frac{2}{3-\sqrt{8}}=11.656854$.

If M = modulus, or the present light of the sun's homogeneous luminiferous atmosphere, there appears to have been four transformations of uniform into variable velocity, since the nebular rupture of the nearest fixed star, α Centauri. For $\pi^4 M = 214289$, earth's mean distance being taken as the unit. The estimates for the distance of α Centauri, vary between 211400 and 231200. Five rupturing condensations from α Centauri, bring us to earth; and single rupturing falls from Neptune, Uranus, Saturn, and Jupiter, bring us, respectively, to the Asteroids, Mars, Venus, and Mercury. The following table exhibits the accordance between theoretical and observed positions:—

$\pi^4 M \div n^5$	$= .996$	Earth	$= 1.000$
Neptune $\div n$	$= 2.577$	Astræa	$= 2.577$
Uranus s. p.[2] $\div n$	$= 1.517$	Mars	$= 1.524$
Saturn s. p. $\div n$	$= .749$	Venus a.	$= .749$
Jupiter s. a. $\div n$	$= .473$	Mercury s. a.	$= .477$

Rev. Charles F. Thomas was elected a member.

The following paper was ordered to be published:—

[1] "Origin of the Stars."

[2] s. secular; p. perihelion; a. aphelion.